RF Exposure Evaluation declaration

Product Name	Speaker system
Model No.	RSB-8
FCC ID	R48-RSB8

Applicant	Meiloon Industrial Co., Ltd.
Address	No. 99, Xingfu Road, Taoyuan Dist., Taoyuan City 330, Taiwan

Date of Receipt	Jun. 27, 2016
Date of Declaration	Aug. 17, 2016
Report No.	1670013R-RFUSP23V00

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
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1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)
LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula
Friis transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.
The temperature and related humidity: 18℃and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product : Speaker system
Test Item : RF Exposure Evaluation
Test Site : No.3 OATS

For BT:

Operation Frequency	2402 – 2480MHz
Maximum Conducted output power	7.66dBm
Antenna gain	6.2dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
5.83445	0.004839

Power density is lower than the limit (1 mW/cm^2).

For BLE:

Operation Frequency	2402 – 2480MHz
Maximum Conducted output power	0.53dBm
Antenna gain	6.2dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
1.1298	0.000937

Power density is lower than the limit (1 mW/cm^2).

For 2.4GHz WLAN

Operation Frequency	2412-2462MHz, 2422-2452MHz
Maximum Conducted output power	22.97 dBm
Antenna gain	1.8 dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
198.152702581	0.059666

Power density is lower than the limit (1 mW/cm2).

For 5GHz WLAN

Operation Frequency	5180-5320MHz, 5500-5700MHz, 5745-5825MHz 5190-5310, 5510-5670MHz, 5755-5795MHz
Maximum Conducted output power	13.87 dBm
Antenna gain	1.5 dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
24.378108184	0.006850630

Power density is lower than the limit (1 mW/cm2).